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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,103	03/16/2004	Charles B. Whisman III	GES0001-100	3230
35138	7590	10/03/2005	EXAMINER	
COZEN O' CONNOR, P.C. 1900 MARKET STREET PHILADELPHIA, PA 19103-3508			HOPKINS, ROBERT A	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/802,103

Applicant(s)

WHISMAN, CHARLES B.

Examiner

Robert A. Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-85 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39-57 is/are allowed.
- 6) ☐ Claim(s) 1-38, 58-80 and 83-85 is/are rejected.
- 7) ☒ Claim(s) 81 and 82 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6-14-04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION*****Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the above ground container in claims 4,5, and 69 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17,58-66 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Buehlman et al(6210073).

Buehlman et al teaches a treatment system comprising two or more conduits(94,98,100,102) for conducting two or more different reagents(column 6 lines 53-61) , at least one injection port(78,80,84,90) associated with each of the two or more conduits, the injection ports separately dispensing the two or more different reagents, and a diffusion barrier(120,122,124,126) placed between at least two injection ports dispensing different reagents(see figure 6). Buehlman et al further teaches wherein the treatment system is substantially underground. Buehlman et al further teaches wherein the system treats groundwater and/or soil. Buehlman et al further teaches wherein one or more of the injection ports comprises a diffuser, well screen , or sprayer(well screen with openings 88; column 5 lines 31-34). Buehlman et al further teaches wherein one or more of the injection ports comprises a check valve(112). Buehlman et al further teaches wherein the system comprises a conduit for gas and a conduit for liquid (column 6 lines 53-61).

Examiner notes claims 9-12 recite a statement of flow rates through the system and do not further limit the structure of the treatment system , therefore it is anticipated that the conduits are capable of handling the required flow rates for the reagents.

Examiner notes claims 13-16 recite a statement of the types of reagents used and do not further limit the structure of the treatment system , therefore it is anticipated that the conduits are capable of supplying any required reagent through the conduits.

Examiner notes claim 17 recites a method of supplying a reagent, but does not further limit the structure of the treatment system, therefore the limitation is not given patentable weight.

Claims 18-34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Buehlman et al(6210073).

Buehlman et al teaches a system for treating groundwater and/or soil comprising two or more conduits(94,98,100,102) for conducting two or more different reagents into the groundwater through a bore hole(52), at least one injection port(78,80,84,90) associated with each of the two or more conduits for dispensing the two or more different reagents, wherein at least two of the injection ports are at different points along the length of the bore hole(see figure 6), a diffusion barrier(120,122,124,126) placed in the bore hole between the at least two injection ports, preventing substantial contacting of at least two different reagents within the bore hole. Buehlman et al further teaches wherein the diffusion barrier comprises bentonite or grout. Buehlman et al further teaches wherein the system comprises two conduits. Buehlman et al further teaches wherein the bore hole is packed with sand(79) around the injection points. Buehlman et

al further teaches wherein the bore hole is packed with a further diffusion barrier(126) above the injection ports. Buehlman et al further teaches wherein the injection ports comprises a diffuser, well screen , or sprayer(well screen with openings 88; column 5 lines 31-34). Buehlman et al further teaches wherein one or more of the injection ports comprises a check valve(112). Buehlman et al further teaches wherein the system comprises a conduit for gas and a conduit for liquid (column 6 lines 53-61).

Examiner notes claims 26-29 recite a statement of flow rates through the system and do not further limit the structure of the treatment system , therefore it is anticipated that the conduits are capable of handling the required flow rates for the reagents.

Examiner notes claims 30-33 recite a statement of the types of reagents used and do not further limit the structure of the treatment system , therefore it is anticipated that the conduits are capable of supplying any required reagent through the conduits.

Examiner notes claim 34 recites a method of supplying a reagent, but does not further limit the structure of the treatment system, therefore the limitation is not given patentable weight.

Claims 35-38 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Buehlman et al(6210073).

Buehlman et al teaches a system for treating groundwater and/or soil comprising two conduits(94,98) for separately conducting a first reagent comprising hydrogen peroxide(gaseous or liquid oxidant; column 6 lines 45-46) and a second reagent comprising ozone(ozone generator; column 6 line 47) into the groundwater through a bore hole(52), an injection port(78,80) at the end of each conduit, wherein the injection

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ports are at different points along the length of the bore hole(see figure 6), a diffusion barrier(120) placed in the bore hole between the two injection ports, preventing substantial contacting of the hydrogen peroxide and the ozone within the bore hole prior to their diffusing out of the bore hole. Buehlman et al further teaches wherein the injection port of the conduit conducting ozone is a diffuser. Buehlman et al further teaches wherein the injection port of the conduit conducting hydrogen peroxide comprises a well screen. Buehlman et al further teaches wherein the injection port of the conduit conducting hydrogen peroxide comprises a check valve.

Claims 67-80 and 83-85 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Buehlman et al(6210073).

Buehlman et al teaches a method of treating groundwater and/or soil comprising contacting two or more reagents, wherein said contacting occurs after the two or more reagents have diffuses into the groundwater from separate conduits(figure 6), wherein the separate conduits are separated by a diffusion barrier(120,122,124,126). Buehlman et al further teaches wherein the treating is in situ. Buehlman et al further teaches wherein at least one of the two or more reagents reacts with organic molecules dissolved or suspended in the groundwater and/or adsorbed in soil. Buehlman et al further teaches wherein at least one of the two or more reagents oxidizes organic molecules dissolved or suspended in the groundwater and/or adsorbed in soil. Buehlman et al further teaches wherein the contacting produces a further reagent than can react with organic molecules dissolved or suspended in the groundwater and/or adsorbed in the soil. Buehlman et al further teaches wherein of the two or more

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reagents comprises hydrogen peroxide(liquid or gaseous oxidant ;column 6 lines 45-46) and another of the two or more reagents comprises ozone (ozone generator; column 6 line 47). Buehlman et al further teaches wherein the organic molecules comprises VOCS(column 1 lines 10-12). Buehlman et al further teaches wherein two or more reagents are injected below ground into the water and/or soil. Buehlman et al further teaches wherein ozone is injected into the ground at a deeper level than the hydrogen peroxide(column 6 lines 57-61). Buehlman et al further teaches wherein the diffusion barrier is located inside the bore hole. Buehlman et al further teaches wherein the bore hole is about 2 to about 12 inches in diameter and about 2 to about 100 feet deep. Buehlman et al further teaches wherein the bore hole is packed with sand at the injection ports. Buehlman et al further teaches wherein the diffusion barrier comprises bentonite or grout.

***Allowable Subject Matter***

Claims 81 and 82 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 81 recites "wherein said diffusion barrier is located inside a conduit". Buehlman et al teaches wherein the diffusion barrier is located inside a bore hole. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide wherein said diffusion barrier is located inside a conduit because Buehlman et al does not suggest such a modification. Claim 82 depends on claim 81 and hence would also be allowable upon incorporation of claim 81 into claim 67.



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Claims 39-57 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 39 recites "a diffusion barrier placed in said conduit above said injection port, isolating reagent injection location to a minimum depth within the borehole".

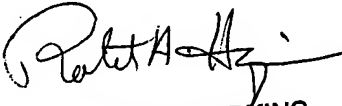
Buehlman et al teaches a diffusion barrier placed outside the conduit and within the borehole. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a diffusion barrier placed in said conduit above said injection port, isolating reagent injection location to a minimum depth within the borehole because Buehlman et al does not suggest such a modification. Claims 40-57 depend on claim 39 and hence are also allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rah  
September 28 ,2005

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
